

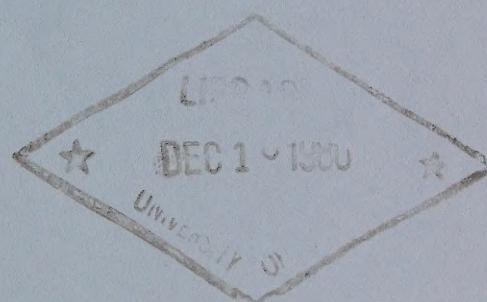
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NATIONAL ENERGY BOARD
REASONS FOR DECISION

In the Matter of the Application under
Part IV of the National Energy Board Act

of



Cochin Pipe Lines Ltd.
Phase II

November 1980

National Energy Board

IN THE MATTER OF the National Energy Board Act and
the regulations made thereunder, and

IN THE MATTER OF an application by Cochin Pipe Lines
Ltd. (hereinafter called "the Applicant") for certain orders
respecting rates and services pursuant to Part IV of the
National Energy Board Act, filed with the Board under
File No. 176-C-1.

NATIONAL ENERGY BOARD

REASONS FOR DECISION

REASONS FOR DECISION

Representatives:

R.C. Ross, Cochin Pipe Lines Ltd.
G.W. Crawford

In the Matter of the Application Under
Part IV of the National Energy Board Act

H.H. Ferguson, Minister of Natural Resources Canada, Plaintiff

A.L. Lindsay, Canadian Natural Gas
Transmission Company, Defendant

B.A. Nader, Cochin Pipe Lines Ltd.

Phase II

November 1980

Ce rapport est publié
séparément dans les
deux langues officielles.



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(i)

National Energy Board

IN THE MATTER OF the National Energy Board Act and
the Regulations made thereunder, and

IN THE MATTER OF an application by Cochin Pipe Lines Ltd. (hereinafter called "the Applicant") for certain Orders respecting tolls and tariffs pursuant to Part IV of the National Energy Board Act, filed with the Board under File No. 1762-C18-1.

HEARD at Ottawa, Ontario on 20 and 21 October 1980.

Before: C.G. Edge Presiding Member
 J.R. Jenkins Member
 R.B. Horner Member

Appearances:

R.C. Muir	)	Cochin Pipe Lines Ltd.
C.E. Crawford)	
F.R. Foran	)	A.G. Pipe Lines (Canada) Ltd.
R. Bowser	)	Nova, An Alberta Corporation
H.A. Fergusson	)	Dow Chemical of Canada, Limited
A.I. Ilnyckyj	)	Hudson's Bay Oil and Gas
	)	Company Limited
E.A. Abssy	)	Imperial Oil Limited
G.H. Robichon)	Trans-Northern Pipe Line Company
K.J. MacDonald)	National Energy Board
S.K. Fraser)	

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ABBREVIATIONS

"the Applicant", "Cochin"	Cochin Pipe Lines Ltd.
or "the Company"	
"bbl"	Barrel
"b/d"	Barrels per Day
"the Board" or "the NEB"	National Energy Board
"DCF"	Discounted Cash Flow
"IPL"	Interprovincial Pipe Line Limited
"M/Bbls"	Thousand Barrels
"m ³ /d"	Cubic Metres Per Day
"Mm ³ "	Thousand Cubic Metres
"NEB Act"	National Energy Board Act
"O.D."	Outside Diameter
"SI"	International System of Units
"test period"	period of time during which costs and revenues are considered to be representative of the period for which new rates and tolls are being sought for and will apply.
"U.S."	United States

CHAPTER 1

THE APPLICATION

By an application dated 25 June 1980, Cochin applied to the Board for Orders under Part IV of the NEB Act fixing the just and reasonable rates or tolls Cochin may charge for or in respect of the transportation of ethane, ethylene and propane and for such other Order or Orders as will enable Cochin to file a tariff containing tolls which are just and reasonable.

Under the terms of an agreement entitled the "Joint Venture Agreement For The Construction, Operation and Maintenance Of The Cochin Pipeline" dated 14 July 1976, and assignments and novations thereto, Cochin Pipe Lines Ltd., as operator, constructed and operates and maintains the pipeline system for its owners.

The Cochin pipeline system extends over 1,900 miles from Fort Saskatchewan, Alberta, through the States of North Dakota, Minnesota, Iowa, Illinois, Indiana, Ohio and Michigan and from Windsor to Sarnia, Ontario. The pipeline system is a key facility in the world-scale Alberta ethane-ethylene petrochemical project.

The Cochin pipeline that is the subject of the present application is the Canadian section of the above-described system which is owned in undivided percentage interest by

Cochin Pipe Lines Ltd.	32.5 per cent
Dow Pipe Line Ltd.	32.5 per cent
A.G. Pipe Lines (Canada) Ltd.	20.0 per cent
Petro-Canada Exploration Inc.	10.0 per cent
Shell Canada Resources Limited	5.0 per cent

except that the portion of the Canadian section consisting of 82.8 miles of 12.750 inches O.D. pipeline extending from the Windsor, Ontario, Dome Plant Site to the facilities of Dow at Sarnia, Ontario, is owned entirely by Cochin and is made available for use in the pipeline operation.

On 12 May 1976, Cochin entered into long-term agreements for the shipment of ethane and ethylene over the Cochin pipeline system. It was on the basis of these contracts that the joint interest owners decided to proceed with the Cochin project.

Attached as Schedule "A" to both the ethane and ethylene shipping agreements entered into by Cochin, is a document entitled "Cochin Pipe Line System Annual Cost of Service Revenue Determination". Schedule "A" and an amendment thereto are attached to these Reasons for Decision as Appendix IV. The application filed by Cochin requested that the Board

adopt a methodology of regulation consistent with and embodying the principles contained in Schedule "A" to the ethane and ethylene shipping agreements.

In Phase I of the Rate Hearing, the Board accepted the methodology of regulation proposed by Cochin. In Phase II of the proceedings, Cochin requested the Board to approve, among other things:

- (a) Depreciation and amortization charges for the year, commencing with the third full calendar year of operation, on plant, facilities and deferred charges using annual straight line rates as filed with and approved by the National Energy Board, plus
- (b) Return on rate base for the year at an annual rate (expressed as a percentage of the rate base) which is:

$$\frac{19 + V}{12}$$

where "V" is the number of thousands of barrels per day on an average over the year of all liquid hydrocarbons which in total are tendered to the System in that year or were obliged to be tendered to the System or be subject in any event to payment of the Cost of Service with respect thereto under the various Shipping Agreements; provided that "V" shall not be less than 50 or greater than 80, and where the rate base for the year is the mean average of the amounts from the opening accounts for the year

and from the closing accounts for the year, which are the mean average of:

1. the total investment, which is the sum of:

- (i) the original cost of plant, facilities and deferred charges, plus
- (ii) deemed cash working capital of 12 1/2 per cent of the operating expenses for 12 months of the year, plus
- (iii) the cost of reasonable inventory of materials, equipment, parts and supplies required for operation, maintenance and administration,

and

2. the residual investment, which is the sum of:

- (i) the total investment in 1. less
- (ii) the accumulated depreciation and amortization, plus

(c) Deemed interest accruals for the year on long term debt at the annual rate of 11 per cent based on the deemed balance of long term debt outstanding during the year which is the sum of:

1. 75 per cent of the mean average from the opening accounts for the year and from the closing accounts for the year, of the total investment which is the sum of:

- (i) the original cost of the plant, facilities and deferred charges, plus
- (ii) deemed cash working capital of 12 1/2 per cent of the operating expenses for the 12 months of the year, plus
- (iii) the cost of reasonable inventory of materials, equipment, parts and supplies required for the operation, maintenance and administration, less

2. the mean average, as at the opening of accounts for the year and at the closing of accounts for the year, of the cumulative total deemed repayments of the principal of long term debt made in equal annual amounts of 1/20th of 75 per cent of each addition to total investment, as defined in 1. above, on July 1st of each year beginning in the year immediately following the year such addition was made.

plus

(d) Provision for current federal, provincial and other government income taxes for the year on the basis that:

- 1. the operation of the Canadian System is the only business of a company, and
- 2. the deductions permitted under the applicable tax legislation and regulations will be taken commencing

with the first date cost of service payments accrue and will be used so as to minimize the amounts of income taxes payable, and

3. the interest expense is as determined in (c).

In its application, Cochin filed financial information for the calendar year of 1979 as the base year, adjusted to project the costs of the test period represented by the twelve months beginning 1 January 1981.

Phase II of the hearing commenced in Ottawa on 20 October 1980 and was completed on 21 October 1980.

CHAPTER 2RATE BASE

The semi-depreciated rate base, determined according to Schedule "A" of the shipping agreements, includes the average of average gross plant in service and average net plant in service, and an allowance for working capital.

The table below summarizes the submission by the Applicant, the adjustments made by the Board and the amount approved by the Board for the rate base for the test period.

The adjustments made by the Board are explained in the sections of this Chapter which follow the table.

SUMMARY OF RATE BASE

(\$000)

	Application as amended*	NEB Adjustments	NEB Determination
<u>1. Plant at Cost</u>			
(a) Plant in service beginning of year	100,262	-	100,262
(b) Additions during year	1,300	(179)	1,121
(c) Plant in service end of year	101,562	(179)	101,383
(d) Mean average of plant costs (a + c) ÷ 2	100,912	(90)	100,822
<u>2. Residual investment in plant</u>			
(a) Plant in service, beginning of year	100,262	-	100,262
(b) Accumulated depreciation, beginning of year	-	-	-
(c) Net balance, beginning of year	100,262	-	100,262
(d) Plant in service, end of year	101,562	(179)	101,383
(e) Accumulated depreciation, end of year	(5,645)	10	(5,635)
(f) Net balance, end of year	95,917	(169)	95,748
(g) Mean average of residual plant (c + f) ÷ 2	98,090	(85)	98,005
<u>3. Mean average of 1(d) and 2(g)</u>	99,501	(87)	99,414
<u>4. Working capital</u>	2,567	(46)	2,521
<u>5. Total rate base</u>	102,068	(133)	101,935

* Amendments by Cochin based on matters raised during the hearing.

CAPITAL BUDGET

Evidence

The Applicant included, in the determination of its rate base, a capital budget of \$1,300,000 for the test period.

Views of the Board

The capital budget of \$1,300,000 consisted of \$413,000, for "Custody Transfer Facilities" at Alameda, Saskatchewan, which was approved by the Board in October 1980, and \$887,000 of Class "C" construction which had not been approved by the Board at the time of the hearing. Subsequent to the close of the rate hearing, the Board approved the 1981 Class "C" construction application, which had been revised downward from \$887,000 to \$707,000.

Accordingly, the Board has reduced the Applicant's estimated 1981 capital budget of \$1,300,000, included in the determination of rate base in the 1981 test period, by \$179,300 to agree with the \$1,120,700 approved by the Board for the year 1981.

WORKING CAPITAL

The following table summarizes the working capital allowance submitted by the Applicant, as amended, adjustments made by the Board and the amount allowed by the Board.

WORKING CAPITAL

(\$000)

	<u>Application as amended</u>	<u>NEB Adjustments</u>	<u>NEB Determination</u>
<u>Cash Working Capital</u>			
Operating expenses	<u>12,770</u>	<u>(34)</u>	<u>12,736</u>
12½ per cent of operating expenses	<u>1,596</u>	<u>(4)</u>	<u>1,592</u>
<u>Inventory of Materials and Supplies</u>			
Beginning of year	<u>925</u>	<u>(41)</u>	<u>884</u>
End of year	<u>1,017</u>	<u>(44)</u>	<u>973</u>
Average inventory of materials and supplies	<u>971</u>	<u>(42)</u>	<u>929</u>
<u>Working Capital</u>	<u>2,567</u>	<u>(46)</u>	<u>2,521</u>

Cash Working Capital

The proposed method of calculating deemed cash working capital at 12 1/2 per cent of operating expenses for 12 months of the year has been approved by the Board.

The adjustment of \$4,000 to cash working capital flows directly from the adjustment of \$34,000 to operating expenses as described in Chapter 7.

Inventory of Materials and SuppliesEvidence

Evidence was adduced that the Applicant's estimate of \$925,000 for inventory of materials and supplies, as at 31 December 1980, was not determined in accordance with the provisions of Section 8 of Schedule 1 of the Oil Pipeline Uniform

Accounting Regulations. It contains an adjustment of \$50,800 for "appreciation of existing inventory" which converts the inventory to a non-cost basis.

To eliminate the inventory appreciation, a witness for the Applicant indicated that a reduction of 20 per cent for inventory turnover must be made to the adjustment of \$50,800, and so reduce the adjustment to approximately \$40,000.

Views of the Board

The Board has reduced the adjustment of \$50,800 by \$10,000 to \$40,800 to convert the 31 December 1980 inventory to a cost basis. The adjusted 1980 closing inventory is \$884,200.

The Board has adjusted the 31 December 1981 inventory to \$972,600 by using the same method employed by the Company for inventory valuation (110 per cent of the 1980 closing balance).

The Board accepts the undertaking given by Counsel for Cochin that the Applicant change its inventory valuation to a cost basis.

CHAPTER 3TOTAL COST OF SERVICE/REVENUE REQUIREMENT

A summary of the total cost of service/revenue requirement is outlined below.

<u>Total Cost of Service/Revenue Requirement</u> (\$000)				
	<u>Ref. Chapter</u>	<u>Application as amended</u>	<u>NEB Adjustments</u>	<u>Determination</u>
Interest on deemed debt	4	7,583	(4)	7,579
Operating expenses	7	12,770	(34)	12,736
Depreciation	6	5,645	(10)	5,635
Amortization of hearing costs	7	192	-	192
Income tax	7	-	-	-
Net (gain) or loss on sale of interface and allowance product	8	<u>(524)</u>	<u>-</u>	<u>(524)</u>
Total cost of service/revenue requirement, excluding return on rate base		25,666	(48)	25,618
Add: Return on rate base	5	<u>7,972</u>	<u>(11)</u>	<u>7,961</u>
Total cost of service/revenue requirement		<u>33,638</u>	<u>(59)</u>	<u>33,579</u>

Summary of Adjustments

1. The 1981 capital budget of \$1,120,700, approved by the Board for inclusion in the determination of rate base, was adjusted downward from \$1,300,000 by \$179,300 as explained on page 2-3. This adjustment causes changes in the items noted below as follows:

	(\$000)
(i) Interest on deemed debt	(4)
(ii) Depreciation	(10)
(iii) Return on rate base	<u>(11)</u>
	(25)
2. Adjustment to operating expenses to reflect the amounts approved by the Board for wages, salaries and benefits.	<u>(34)</u>

Total adjustments to cost of service/revenue requirement

(59)

CHAPTER 4

INTEREST EXPENSE

Cochin submitted that its pipeline operation, which is owned in undivided interest, is unique and that it is not a separate corporate entity with identifiable debt and equity related costs. In the Applicant's methodology, it should be noted that the interest on the deemed debt is included as an item separate from return on rate base in determining the cost of service. The return on rate base, to be included in cost of service, is in fact a return on equity. A negotiated methodology including a semi-depreciated rate base, as presented in Schedule "A" of the shipping agreements, is the basis used for calculating the components of the cost of service, a methodology which the Applicant and owner-shippers submit to be just and reasonable. In addition, Cochin's cost of service includes income taxes calculated on a flow-through, rather than on a normalized, basis.

In previous oil pipeline company Rate Hearings, the Board has approved the more traditional utility-type methodology which uses an original cost fully-depreciated rate base and incorporates both interest charges and return on equity in the return on rate base; the normalized method of recording income taxes has also been common to the other oil pipeline rate cases.

EVIDENCE

The Applicant's interest expense calculation is in accordance with Schedule "A" of the amended shipping agreements. Total debt is deemed to be 75 per cent of the average plant in service plus working capital, for each year of the project. The annual deemed interest at 11 per cent per annum is computed on the net debt which is annually reduced by deemed repayments of 1/20th of 75 per cent of the average plant in service plus working capital. No party to the hearing questioned the Applicant's method of determining interest expense.

VIEWS OF THE BOARD

The Board has approved the method and the rate of interest to be applied in the test period.

CHAPTER 5RETURN ON RATE BASE (RETURN ON EQUITY)EVIDENCERate of Return Methodology

The Applicant's proposed rates of return on rate base in 1981 are determined from the formula included in Schedule "A" to the ethane and ethylene shipping agreements. These agreements resulted from arms' length negotiations between the various owners of the pipeline and the various ethane and ethylene shippers. The formula adopted by the Applicant for determining the rate of return on rate base for a particular year is $\frac{19 + V}{12}$, where "V" is the number of thousands of barrels per day on an average over the year of all liquid hydrocarbons which in total are tendered to the system in that year or obliged to be tendered to the system or be subject in any event to payment of the cost of service with respect thereto under the various shipping agreements, provided that "V" shall not be less than 50 or greater than 80. The rate base to which the rate of return is applied is a semi-depreciated rate base which is described in Chapter 1.

The return, expressed in dollars, is included in cost of service separately from the interest on deemed debt as explained in the first paragraph to Chapter 4. For this reason, the return on rate base is, in reality, a return on equity.

Test Year Comparisons

A witness explained that, for analytical purposes, in order to recast the 75 per cent 10-year debt in terms of 20-year debt, the equivalent debt ratio would approximate 25 per cent. Therefore, the Company's evidence indicated that, for comparative purposes, in employing the Board's traditional methodology, a practical capital structure should consist of 25 per cent debt and 75 per cent equity.

It is noted that, as the debt ratio decreases under the Board's traditional methodology, the revenue requirement increases. Employing this methodology, a 50 per cent debt ratio generates a revenue requirement of \$34 million, which approximately equals the applied-for revenue requirement. The following table illustrates the revenue requirement generated by employing various capital structures under the Board's conventional methodology.

	<u>Capital Structure</u>		<u>Approximate Revenue Requirement</u>
	<u>Debt (Per Cent)</u>	<u>Equity (Per Cent)</u>	<u>(\$ million)</u>
1.	75	25	30.6
2.	50	50	34.1
3.	25	75	38.1

Note: The Board's traditional methodology, as illustrated in this table, assumes a fully depreciated rate base, a debt cost rate of 11 per cent and an equity cost rate of 15 per cent. Taxes are determined on a normalized basis.

The evidence presented at the hearing indicated that the applied-for revenue requirement for the period is lower than that amount of revenue which would be generated by applying the Board's traditional methodology using a 15 per cent return on equity and a capital structure commensurate with the 20-year life of the pipeline.

Lifetime Rates of Return

The Applicant applied for a variable rate of return on a semi-depreciated rate base which could vary between 5.75 per cent and 8.25 per cent, depending upon the volume of throughput. According to Company witnesses, the practical upper limit would likely not exceed a rate of return of 7.50 per cent because the current forecast of traffic, which produces "V" in the rate of return formula, does not exceed 71. This variable rate of return provides the owner-shippers with an incentive to seek out additional shippers in order to increase throughputs, which consequently increases the rate of return. In support of its range of rates of return, the Applicant in Phase I provided whole-life 20-year discounted cash flow models illustrating the DCF rates at volumes of both 50,000 and 71,000 barrels of throughput per day. In Phase II of the hearing, the Applicant presented additional whole-life models illustrating the DCF rates at both volume levels if traffic were to continue to 30 years. The following table, presented as evidence, summarizes the DCF rates of return on total capital for 10, 20, and 30 years at throughput volumes of 50,000 and 71,000 barrels per day respectively.

DCF Rates of Return on Capital
(Per Cent)

<u>10-Year Contract Life</u>		<u>20-Year Project Life</u>		<u>30-Year Physical Life</u>	
<u>50 mb/d</u>	<u>71 mb/d</u>	<u>50 mb/d</u>	<u>71 mb/d</u>	<u>50 mb/d</u>	<u>71 mb/d</u>
7.0	8.7	12.5	13.8	13.2	14.5

A witness stated that calculations on a 30-year physical life basis showed that the resulting rates of return are approximately one-half to three-quarters of a percentage point higher than on the 20-year basis. The above rates are based on total capital, whereas evidence indicated that, at the practical maximum throughput of 71,000 barrels per day on a 20-year life, the return on 75 per cent equity would approximate 15.5 per cent. A Company witness stated that recent Board decisions were examined and that it is the Applicant's view that the proposed rates of return, which cover a range of throughputs and terms of traffic, are eminently reasonable. It was recognized that the Cochin pipeline is not comparable to other pipelines in the sense that the other utilities under the Board's jurisdiction have different business circumstances and risks. Normally, they have different actual, embedded or deemed debt and equity ratios. Further evidence indicated that the Applicant had compared its proposed rates of return with the return on investment in other Canadian industries. Cochin's rates of return on equity from 7 per cent to 15.5 per cent are consistent with the range of the industrial returns. A witness stated that this demonstrates the reasonableness of the Cochin range of returns.

VIEWS OF THE BOARD

The Board accepts that the range of rates of return obtained from the formula $\frac{19 + V}{12}$ with the minimum 50 and maximum 80 for V, as a preliminary guide to the lifetime return on equity, is not unreasonable. The Board notes that all owner-shippers were in agreement with this formula and no intervenors objected to it. The test period rates also appear to be reasonable when compared with those achieved by the methodology the Board has adopted in past oil pipeline rate cases.

CHAPTER 6AMORTIZATION AND DEPRECIATIONEVIDENCE

The toll design of the Applicant is based upon depreciation and amortization on plant, facilities and deferred charges commencing in the third full calendar year of operation, namely, in 1981. The amount of depreciation included in the cost of service for the test period, as amended, was \$5,645,000.

VIEWS OF THE BOARD

While the Board is prepared to accept the proposed method for rate-making purposes, this decision will not affect rates of depreciation and amortization approved by the Board for accounting purposes.

The Board has reduced the amount of depreciation sought by Cochin for the test period by \$10,000 to \$5,635,000 due to the changes in the estimated 1981 plant additions approved by the Board as explained under "Capital Budgets" in Chapter 2.

CHAPTER 7COST OF SERVICE EXCLUDING THE ITEMS
DISCUSSED IN CHAPTERS 4 TO 6OPERATING EXPENSESWages, Salaries and Employee BenefitsEvidence

In its estimate of the allowance for wages and salaries in the test period, Cochin applied an escalation factor of 13.25 per cent for 1980 and 13 per cent for 1981. The 1980 adjustment consisted of a 10.5 per cent increase in wage rates, a 13 per cent increase in salary levels, and an allowance for promotions and progressions estimated as 1.75 per cent of wages and salaries. The Company stated that the 1980 wage increase tracked nationally negotiated settlements and that the 1980 salary increase reflected the competitive conditions of its labour market. Cochin maintained that the promotion and progression allowance was required because of the higher cost of replacing an employee. The 1981 adjustment consisted of a 13 per cent increase applied to both wages and salaries. This adjustment was based on the expected rise in wages and salaries in 1981 in light of anticipated settlements in the wage sector and sustained demand for qualified staff.

Cochin projected an increase in the number of its employees from 27 in 1979 to 33 in both 1980 and 1981. These

employees are required because of the start-up of the Windsor-Sarnia pipeline and the addition of the Regina storage facility.

The Company estimated an increase in the allowance for employee benefits from 31.8 per cent to 33.8 per cent of total wages and salaries. This primarily reflects improvements in the savings plans.

Views of the Board

The Board finds that the proposed general increase in wages and salaries for 1980 is acceptable. However, in the Board's view, the Company has not adequately demonstrated the need for an allowance for promotions and progressions in addition to the increase in wage and salary levels which the Company indicated were competitive within the industry. In recognition of the Company's need to offer competitive wages and salaries in its geographical locations, it is the Board's view that an escalation factor of 11.75 per cent would be appropriate for 1981.

The Board accepts the adjustments to wages, salaries and benefits due to staff additions.

The Board has adjusted the allowance for employee benefits to reflect the approved wage and salary escalation factors.

Operating expenses have, therefore, been reduced by \$34,300 to take into account the adjustments to wages, salaries and employee benefits in the preceding section.

INCOME TAXES

In Phase I, the Board approved the recording of income taxes on the flow-through basis and the applied-for income tax rate of 48 per cent. No income taxes are deemed to be payable in the test period.

HEARING COSTS

Evidence

The Applicant proposed that the estimated hearing costs of \$385,000 be amortized through cost of service over two years beginning in 1981. Evidence was adduced during the hearing with regard to the nature of these costs. No break-down between the amount of those expenses which had actually been incurred or accrued and those which were based on estimates alone, was provided.

Views of the Board

Of the total proposed hearing costs of \$385,000, the Board, therefore, approves the amortization during the test year of 50 per cent, that is to say \$192,500 (rounded to \$192,000 in Chapter 3). The remainder of the hearing costs will be considered for approval by the Board when the actual amounts are included in the filing of the 1982 budget for the cost of service revenue determination. Thus, the Company will not recover more than its actual costs.

CHAPTER 8TOLL DESIGN AND OTHER TARIFF MATTERSEVIDENCEThroughput

Cochin submitted a throughput forecast totalling 4,767,000 m³ (30,140,800 barrels) for the test year. A copy of this forecast is shown as Table I on page 8 - 3.

Oil Allowance

The Company's tariff includes a 1/2 per cent oil allowance charged by the system on all receipt volumes. This practice is prescribed by the ethane and ethylene shipping agreements. The purpose is to compensate the system for interface, measurement and physical losses of product. Any net loss or gain on the resultant transactions are allocated between the U.S. and Canadian sections on the basis of a ratio calculated from average investment and mileage. The cost of service is then adjusted, as indicated in Chapter 3, to reflect the impact of any net losses or gains. No intervenor objected to this method of compensating for product losses.

Toll Design

The Applicant proposed equal long-haul tolls per barrel for all products, in conformity with the provisions of the ethane and ethylene shipping agreements. Through conversion to SI unit equivalents, these tolls translate into \$7.216/m³ for ethane and ethylene and \$7.182/m³ for propane. The slight difference here reflects differing conversion factors used for each product to translate volumes into SI equivalents.

In addition, the Applicant proposed a short-haul toll design for small volumes of ethane and propane. These short-haul tolls were derived from the sum of:

1. the proportional distance charge, plus
2. a premium charge equal to the unused distance proportion times the charge determined in 1. above.

The Applicant stated that all its shippers were aware of the proposed method of toll design. Since the shippers did not intervene against this proposal, it has been interpreted that they are satisfied with the proposed methodology and resultant tolls.

VIEWS OF THE BOARD

The Board accepts as just and reasonable:

1. the Company's throughput forecast shown in Table I as the basis of toll design for the test year;
2. the 1/2 per cent oil allowance included in the Company's tariffs; and
3. the toll design proposed for the derivation of long-haul and short-haul tolls.

It is noted that Board adjustments to the rate base and cost of service may affect the calculation of tolls. Therefore, the Board directs the Company to adjust its toll calculations and to file by 19 December 1980 a tariff to be effective 1 January 1981 based on these Reasons for Decision together with supporting information to permit these tolls to be verified.

TABLE I

FORECAST PIPELINE VOLUMES DELIVERED
FOR THE YEAR 1981

Month	Ethane			Propane			Ethylene			Total		
	B/D	M/BBLS	B/D	B/D	M/BBLS	B/D	B/D	M/BBLS	B/D	M/BBLS	B/D	
January	50,409	1,562.7	32,830	1,017.7	9,677	300.0	92,916	2,880.4				
February	64,178	1,797.0	28,830	807.2	Ø	Ø	93,008	2,604.2				
March	64,781	2,008.2	17,650	547.2	10,714	332.1	93,145	2,887.5				
April	74,289	2,228.7	9,150	274.5	9,677	290.3	93,116	2,793.5				
May	69,982	2,169.4	9,150	283.7	10,000	310.0	89,132	2,763.1				
June	58,063	1,741.9	9,150	274.5	Ø	Ø	67,213	2,016.4				
July	47,798	1,481.7	9,150	283.7	10,000	310.0	66,948	2,075.4				
August	47,479	1,471.8	9,150	283.7	9,677	300.0	66,306	2,055.5				
September	32,175	965.3	16,150	484.5	9,677	290.3	58,002	1,740.1				
October	53,256	1,650.9	32,330	1,002.2	Ø	Ø	85,586	2,653.2				
November	48,691	1,460.7	31,330	939.9	12,903	387.1	92,924	2,787.7				
December	59,700	1,850.7	33,330	1,033.2	Ø	Ø	93,030	2,883.8				
Total	55,860	20,389.0	19,813	7,232.0	6,904	2,519.8	82,577	30,140.8				
Metric Equivalent:												
	m ³ /D	Mm ³	m^{3}/D	Mm^{3}	m^{3}/D	Mm^{3}	m^{3}/D	Mm^{3}				
	8,825	3,221.0	3 145	1 147.9	1 091	398.1	13 061	4 767.0				

CHAPTER 9TOLL ADJUSTMENT AND MONITORING PROCEDUREEVIDENCE

For some time, the Board and the pipelines that it regulates have been interested in the development of a toll adjustment and monitoring procedure which would provide scope for certain types of tariff changes without the recurring requirement for a public hearing. This issue was addressed extensively by the Applicant in evidence.

A central concern in implementing such a procedure is the development of reasonable limits by which to gauge when tolls need to be adjusted. Cochin proposed limits of variation in toll revenues of:

1. plus or minus 10 per cent of the revenue requirement, and/or
2. plus or minus 7 1/2 per cent for every rolled-in two-year period from the combined revenue requirement.

VIEWS OF THE BOARD

The Board does not find the proposed limits to be acceptable. Upon review, the Board decided that appropriate limits for this Company would be based upon a range of average daily throughput of plus or minus 5,000 barrels from the forecast test period throughput, and thereafter based on the same range applied to the latest forecast accepted by the Board for deciding tolls.

In its June 1980 IPL Decision, the Board undertook to implement a monitoring procedure for that Company. Recently, a draft Order was sent to IPL outlining the Board's proposed methodology of regulatory toll adjustment and monitoring. While the methodology for IPL is subject to review in the light of comments from interested parties in that case, the Board believes that a procedure similar to that proposed for IPL would also be appropriate for Cochin. The particulars of this procedure are described in detail in the Board Order included as Appendix III hereto.

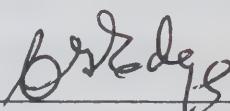
CHAPTER 10DISPOSITION

As stated in the Board's Reasons for Decision in Phase I of the Cochin Pipe Lines Ltd. Rate Case, it is the view of the Board that the Cochin pipeline is a unique operation and, because of that, the Board accepted the methodology of regulation proposed by Cochin, although it deviated from the traditional method employed by the Board in its regulation under Part IV of the National Energy Board Act.

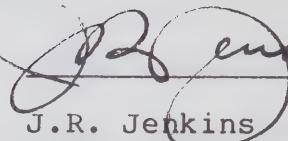
In Phase II, the Board has decided to accept, with some minor exceptions as set forth in the body of these Reasons for Decision, the calculation of Cochin's tolls, based on the "Cochin pipeline system annual cost of service revenue determination" which is attached as Schedule "A" to both the ethane and ethylene shipping agreements entered into by Cochin. It is the Board's view that tolls determined in the manner described in that Schedule "A", as modified by these Reasons for Decision, will result in tolls being charged by Cochin which are just and reasonable. The new tolls to be filed by Cochin as a result of this rate hearing shall take effect on 1 January 1981.

In view of the Board's findings and disposition, as set forth herein, Cochin shall amend its tariff in conformity with Order No. TO-2-80 and these Reasons for Decision.

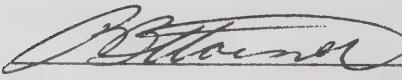
The foregoing chapters together with Orders Nos. TO-2-80 and TO-3-80 constitute our Reasons for Decision and our Decision on the application by Cochin Pipe Lines Ltd. under Part IV of the National Energy Board Act.



C.G. Edge
Presiding Member



J.R. Jenkins
Member



R.B. Horner
Member

NATIONAL ENERGY BOARD



OFFICE NATIONAL DE L'ÉNERGIE

ORDER NO. RH-5-80

IN THE MATTER OF the National Energy Board Act and the Regulations made thereunder, and

IN THE MATTER OF an application by Cochin Pipe Lines Ltd. (hereinafter called "the Applicant") for certain orders respecting tolls and tariffs pursuant to Part IV of the National Energy Board Act, filed with the Board under File No. 1762-C18-1.

B E F O R E the Board on Thursday, the 7th day of August, 1980.

UPON reading the application filed on behalf of the Applicant dated 25th day of June 1980, (hereinafter called "the application"), under Part IV of the National Energy Board Act, for orders fixing the just and reasonable tolls the Applicant may charge for or in respect of the transportation of ethane, ethylene and propane and for such further order or orders as will enable the Applicant to file a tariff containing tolls which are just and reasonable.

IT IS ORDERED THAT:

1. The application will be heard at a public hearing divided into two phases, as follows:

- (1) the methodology of regulation including, inter alia,
 - (a) use of the deemed capital structure for rate-making purposes in the circumstances of a pipeline owned in undivided joint interest,
 - (b) the deferral of depreciation for rate-making purposes,
 - (c) use of the semi-depreciated rate base,
 - (d) the rate of return methodology, and

(e) the tax calculation methodology (flow-through versus normalized) including the use of the deemed capital structure;

(2) the fixing of just and reasonable tolls and tariffs in accordance with the principles determined in Phase 1.

The hearing of Phase 1 of the application will commence at 9:30 a.m. local time, on Tuesday, the 23rd day of September, 1980, in the Hearing Room of the National Energy Board, Trebla Building, 473 Albert Street, in the City of Ottawa, in the Province of Ontario. The hearing of Phase 2 will take place at a time and place to be determined later by order of the Board.

2. The hearing will be conducted in either of the two official languages and simultaneous interpretation will be provided should a party to the proceedings request such facilities in his intervention.

3. The Applicant shall, forthwith, serve a true copy of the application, if not already served, and a true copy of this Order, upon all its shippers and customers, the Attorneys General of the Provinces of Alberta, Saskatchewan and Ontario, the Energy Resources Conservation Board of Alberta, the Ontario Energy Board, the Propane Gas Association of Canada Inc., the Canadian Gas Association, the Canadian Petroleum Association, the Independent Petroleum Association of Canada, and, as soon as possible, upon any other persons who have intervened pursuant to paragraph 5 hereof.

4. Notice of the hearing in the form prescribed by the Board as set forth in the Notice attached to and which forms part

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of this Order shall be published no later than the 15th day of August, 1980, or as soon thereafter as possible, in one issue each of the "Herald" in the City of Calgary and the "Journal" in the City of Edmonton, both in the Province of Alberta, the "Leader-Post" in the City of Regina, in the Province of Saskatchewan; the "Globe and Mail" and the "Financial Post", both in the City of Toronto, the "Citizen" and "Le Droit" in the City of Ottawa, all in the Province of Ontario, and, as soon as possible in the Canada Gazette.

5. Any person intending to intervene in the said hearing shall, on or before the 15th day of September, 1980, file with the Secretary of the Board thirty (30) copies of a written statement containing his intervention, together with any supporting material, which shall include a concise statement of the facts from which the nature of the intervenor's interest in the proceedings may be determined, which may admit or deny any or all of the facts alleged in the application and which shall be endorsed with the address of the intervenor or his solicitor to whom communications may be sent. The intervention may be in either of the two official languages and shall state the official language in which the intervenor wishes to be heard. Any intervenor shall, on or before the 15th day of September, 1980, serve three (3) copies of his intervention and supporting material upon the Applicant and one (1) copy each upon the Attorneys General of the Provinces of Alberta, Saskatchewan and Ontario, the Energy Resources Conservation Board of Alberta, the

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- 4 -

the Ontario Energy Board, the Propane Gas Association of Canada Inc., the Canadian Gas Association, the Canadian Petroleum Association and the Independent Petroleum Association of Canada and shall file proof of service thereof with the Board at the opening of the hearing.

6. The Applicant shall prepare its direct evidence written in question and answer form with lines numbered, for each of its witnesses and shall, on or before the 8th day of September, 1980, file thirty (30) copies thereof with the Secretary of the Board and, as soon as possible, serve one (1) copy upon any party who has intervened pursuant to paragraph 5 above.

7. Any party who has intervened pursuant to paragraph 5 hereof and who wishes to present direct evidence in the hearing, shall prepare direct evidence, written in question and answer form with lines numbered, and shall, on or before the 22nd day of September 1980 file thirty (30) copies thereof with the Board and serve one (1) copy of the same upon the Applicant and each other party who has intervened pursuant to paragraph 5 hereof, a list of which intervenors will be available from the Board on the 17th day of September, 1980.

8. Any party who wishes to obtain additional information from another party in respect of matters raised in filings made with the Board, may request in writing that such information be provided, and the party to whom the request is made shall, as soon as possible, either provide a written response to the request or refer the question to the Board. In order to expedite

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- 5 -

the hearing, such requests and responses should be made before the commencement of the hearing and copies shall be filed with the Secretary of the Board and made exhibits in the hearing by the Applicant.

9. Any interested party may examine a copy of the application and the submissions filed therewith at the offices of:

National Energy Board
Trebla Building
473 Albert Street
Ottawa, Ontario
K1A 0E5

or at the offices of the Applicant at the following address:

Cochin Pipe Lines Ltd.
325 - 9th Avenue S.W.,
Calgary, Alberta

DATED at the City of Ottawa, in the Province of Ontario,
this 7th day of August, 1980.

NATIONAL ENERGY BOARD

G. Yorke Slader.

G. Yorke Slader
Secretary

National Energy Board

NOTICE OF PUBLIC HEARING
COCHIN PIPE LINES LTD. - TOLLS AND TARIFFS

Cochin Pipe Lines Ltd. has applied to the National Energy Board for approval of the tolls and tariffs to be charged for the transportation of ethane, ethylene and propane by its pipeline system.

The National Energy Board will conduct a public hearing of the application to obtain information and to hear the relevant views of interested persons, groups, organizations and companies. The hearing will be held in two phases. Phase 1 will deal with methodology of regulation, and Phase 2 will deal with the determination of cost of service and tolls and tariffs.

The hearing will open on Tuesday, 23 September 1980 at 9:30 a.m. local time, in the Hearing Room of the Board, Trebla Building, 473 Albert Street, Ottawa, Ontario. It will be conducted in either English or French and simultaneous interpretation will be provided should a party to the proceedings request this service in a written submission.

Any party who intends to participate in the hearing must file with the Board a written submission, in either English or French, which may admit or deny any or all of the statements contained in the application. The submission must state:

- 1) the nature of the party's interest in the application,
- 2) whether he wishes to use English or French at the hearing, and
- 3) the name and address of the interested party or that of his lawyer to whom communications may be sent.

Thirty (30) copies of the submission and any supporting information must be delivered to the Secretary of the Board no later than 15 September 1980. Three (3) copies must be delivered by the same date to Cochin Pipe Lines Ltd., (mailing address: P.O. Box 200, Calgary, Alberta, T2P 2H8), and one (1) copy to each of the following: the Attorneys General of the Provinces of Alberta, Saskatchewan and Ontario, the Energy Resources Conservation Board of Alberta, the Ontario Energy Board, the Canadian Gas Association, the Canadian Petroleum Association, the Independent Petroleum Association of Canada, and the Propane Gas Association of Canada Inc. At the opening of the hearing, the Board will require written proof that the submission and any supporting documents have been served on the parties listed above.

A copy of the application will be available for examination during normal business hours at the following locations:

Ottawa National Energy Board,
 Trebla Building,
 473 Albert Street,
 Ottawa, Ontario.
 K1A OE5.

Calgary Cochin Pipe Lines Ltd.
 Gulf Square,
 325 - 9th Avenue S.W.,
 Calgary, Alberta.

Inquiries regarding the hearing may be made in writing to the Secretary of the Board in Ottawa at the address above or by telephoning 613-593-4876.

STATUTORY REFERENCES

The National Energy Board Act, Part IV (R.S.C. 1970, c. N-6, as amended).

G. Yorke Slader
Secretary
National Energy Board

ORDER NO. TO-2-80

IN THE MATTER OF the National Energy Board Act and the Regulations made thereunder; and

IN THE MATTER OF an application by Cochin Pipe Lines Ltd. for certain Orders respecting rates and tolls pursuant to Part IV of the National Energy Board Act filed with the Board under File No. 1762-C18-1

B E F O R E

C.G. Edge)	
Chairman)	
	)	On Friday,
J.R. Jenkins)	
Member	)	the 14th day of
)	
R.B. Horner	)	November, 1980.
Member)	

UPON an application by Cochin Pipe Lines Ltd.

(hereinafter called "the Applicant"), dated the 25th day of June, 1980, for Orders under Part IV of the National Energy Board Act fixing the just and reasonable rates or tolls the Applicant may charge for or in respect of the transportation of ethane, ethylene and propane and for such further Order or Orders as will enable the Applicant to file a tariff containing tolls which are just and reasonable;

AND UPON the Board having heard the evidence and submissions relating to the said application at a public hearing held in Ottawa, on the 23rd, 24th and 25th days of September, 1980, and on the 20th and 21st days of October, 1980;

- 2 -

IT IS ORDERED THAT:

1. The Applicant shall value its inventory on a cost basis in accordance with the provisions of Section 8 of Schedule 1 of the Oil Pipeline Uniform Accounting Regulations.

2. The Applicant shall calculate its wages and salaries in accordance with the decision contained in Chapter 7 of the Board's Reasons for Decision, Phase II.

AND IT IS FURTHER ORDERED THAT:

3. The Applicant shall, on or before the 19th day of December, 1980, file with the Board and serve upon all interested persons, new tariffs, tolls and rates conforming with this Order, Reasons for Decision and Decision.

4. Notwithstanding the filing of the said new tariffs, tolls and rates, the same shall remain suspended and be of no effect until the 1st day of January, 1981.

5. In this Order, "interested persons" includes:

- (a) the Applicant's shippers;
- (b) the Attorneys General of the Provinces of Alberta, Saskatchewan and Ontario;
- (c) parties to the hearing of this application; and

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TO-2-80

- 3 -

(d) any person who notifies the Applicant and the Board that he wishes to be registered as an interested person in the Applicant's tolls and tariffs and is accepted by the Board as such.

NATIONAL ENERGY BOARD



G. Yorke Slader,
Secretary

NATIONAL ENERGY BOARD



OFFICE NATIONAL DE L'ÉNERGIE

ORDER NO. TO-3-80

IN THE MATTER OF the National Energy Board Act and the Regulations made thereunder; and

IN THE MATTER OF an application by Cochin Pipe Lines Ltd. for certain Orders respecting rates and tolls pursuant to Part IV of the National Energy Board Act filed with the Board under File No. 1762-C18-1.

B E F O R E:

C.G. Edge)	
Chairman	)	On Friday,
)	
J.R. Jenkins	)	the 14th day of
Member)	
)	
R.B. Horner	)	November, 1980
Member)	

UPON an application by Cochin Pipe Lines Ltd. (hereinafter called "the Applicant"), dated the 25th day of June, 1980, for Orders under Part IV of the National Energy Board Act fixing the just and reasonable rates or tolls the Applicant may charge for or in respect of the transportation of ethane, ethylene and propane and for such further Order or Orders as will enable the Applicant to file a tariff containing tolls which are just and reasonable;

AND UPON the Board having, by Order No. RH-5-80, ordered that the application be heard at a public hearing divided into two phases with the first phase dealing with the methodology of regulation and the second phase dealing with the fixing of just and reasonable tolls and tariffs in accordance with the principles determined in Phase I;

AND UPON the Board having commenced the hearing of Phase I on the 23rd day of September, 1980;

AND UPON the Board, in Phase I, having accepted in principle the toll adjustment and monitoring approach suggested by the Applicant and having requested the Applicant to make a more specific proposal thereon in Phase II of the hearing;

AND UPON the Applicant having made a more specific proposal in Phase II of the hearing;

AND UPON the Board having heard the evidence and submissions relating to the proposed toll adjustment and monitoring scheme at the hearing of Phase II which commenced on the 20th day of October, 1980;

IT IS ORDERED THAT:

1. New tolls shall be based on the cost of service for the calendar year in which the tolls are to be in effect.
2. An application for new tolls shall be made within thirty (30) days when it is forecast that average daily throughputs will exceed, by more than 5,000 barrels, the forecast throughputs approved by the Board at either the most recent rate hearing or forecast throughputs filed subsequently by the Applicant and approved by the Board for the derivation of tolls under this toll adjustment and monitoring scheme. The application shall include tolls, derived in accordance with the rate of return formula in Schedule "A" to the Ethane and Ethylene Shipping Agreements, to be set at the level which will result in a rate of return corresponding to the new forecast volume, based on the cost of service for the calendar year during which the tolls are to take effect and assuming the new tolls would be in effect for the whole of the calendar year.

3. Within thirty (30) days after the end of each calendar quarter, the Company shall file a revised forecast, for the full current calendar year, of throughput and cost of service, supported by information in a form suitable to the Board, and in accordance with the policies and principles approved by the Board in the most recent rate hearing of the Company.

4. Filings of applications for new tolls and tariffs shall be classified in three classes, as follows:

(a) CLASS I - includes only adjustments to the cost of service which involve material changes in any of the following factors from the most recent Board Decision following a public hearing:

- (i) throughput;
- (ii) throughput-related costs;
- (iii) rate base, including additions or retirements, as depreciated in accordance with depreciation rates approved by the Board, to the extent of completed projects or projects to be completed in the period during which the adjusted tolls are to be in effect, which have been approved by the Board;
- (iv) salaries and wages expenses and employee benefits to the extent that changes in costs from those previously approved by the Board result from actual settlements, either with the Company itself or in the industry of which the Company is a part, provided that in each case the Board considers the changes to be reasonable;

- (v) taxes other than income taxes to the extent of actual amounts payable, in the absence of unusual circumstances; and
- (vi) income taxes to the extent of changes in rates in effect.

(b) CLASS 2 - includes adjustments in the cost of service, due to material changes, other than those provided for in Class 1, in transportation, maintenance or general expenses, from the most recent Board Decision following a public hearing.

(c) CLASS 3 - includes all adjustments in the cost of service other than those classified as Class 1 or Class 2, and specifically includes adjustments involving any change in any of the policies or principles approved by the Board at any previous rate hearing or changes in the allowed method of rate of return formulation.

5. Application for adjustments in tolls or tariffs shall be made to the Board as follows:

CLASS 1 - by filing with the Board revised tariffs and supporting data as prescribed in paragraph 6 of this Order and serving notice on interested persons as prescribed in paragraph 7 hereof, not later than 45 days prior to the date on which the revised tolls are to be effective.

CLASS 2 - by filing with the Board revised tariffs and supporting data as prescribed in paragraph 6 of this Order and serving notice on interested persons as prescribed in paragraph 7 hereof, not later than 60 days prior to the date on which the revised tolls are to be effective.

CLASS 3 - by formal application for a rate hearing as prescribed in the Board's Rules of Practice and Procedure.

6. When filing revised tariffs as Class 1 or Class 2 applications, the Company shall accompany the filing and the service on interested persons with the following information, in sufficient detail to enable the reasonableness of the estimates to be established, in columnar form, showing amounts authorized by the most recent Board decision following a public hearing, adjustments requested, and forecast amounts:

- (a) throughput showing source, destination, type of product, and volume;
- (b) transportation, maintenance and general expenses by category of expense including explanations and justification for all variances from the previously approved figures;
- (c) average rate base for the calendar year with explanations for all changes from the previously approved figures;
- (d) depreciation and amortization expense and a reconciliation with rate base;
and
- (e) a summary of the total revenue requirement.

7. When filing revised tariffs as Class 1 or Class 2 applications the Company shall, at the same time, serve a true copy of the revised tariffs and the information prescribed in paragraph 6 hereof on interested persons. The serving of information on interested persons in respect of Class 1 applications is for notification purposes.

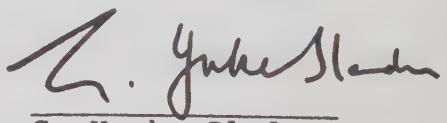
8. Interested persons referred to in paragraph 7 hereof, on whom revised tariffs are served resulting from a Class 2 application, shall file with the Board and serve on the Company and other interested persons within 30 days of the filing of the tariffs, notice of any objections they may wish to make to the revised tariffs.

9. In the case of Class 2 applications, the Company shall, within 15 days of the date for filing of objections by interested persons, file with the Board and serve on interested persons, any rebuttal it may wish to make to the objections filed by the interested persons.

10. In this Order, "interested persons" includes:

- (a) the Applicant's shippers;
- (b) the Attorneys General of the Provinces of Alberta, Saskatchewan and Ontario;
- (c) parties to the hearing of this application; and
- (d) any person who notifies the Applicant and the Board that he wishes to be registered as an interested person in the Applicant's tolls and tariffs and is accepted by the Board as such.

NATIONAL ENERGY BOARD


G. Yorke Slader,
Secretary

COCHIN PIPELINE SYSTEM

ANNUAL COST OF SERVICE REVENUE DETERMINATION

1. CANADIAN SYSTEM

The annual cost of service revenues required for the Canadian System shall comprise of the sum of:

- (a) Actual operating expenses for the year, including transportation, maintenance and general expenses, plus
- (b) Depreciation and amortization charges for the year, commencing with the fourth full calendar year of operation, on plant, facilities and deferred charges using annual straight line rates as filed with and approved by the National Energy Board of Canada, plus
- (c) Return on rate base for the year at an annual rate (expressed as a percentage of the rate base) which is:

$$\frac{19 + V}{12}$$

where "V" is the number of thousands of barrels per day on an average over the year of all liquid hydrocarbons which in total are tendered to the System in that year or were obliged to be tendered to the System or be subject in any event to payment of the Cost of Service with respect thereto under the various Shipping Agreements; provided that "V" shall not be less than 50 or greater than 80,

and where the rate base for the year is the mean average of the amounts from the opening accounts for the year and from the closing accounts for the year, which are the mean average of:

1. the total investment, which is the sum of:
 - (i) the original cost of plant, facilities and deferred charges, plus
 - (ii) deemed cash working capital of 12 1/2% of the operating expenses for 12 months of the year, plus
 - (iii) the cost of reasonable inventory of materials, equipment, parts and supplies required for operation, maintenance and administration,and
2. the residual investment, which is the sum of:
 - (i) the total investment in 1. less
 - (ii) the accumulated depreciation and amortization,plus

(d) Deemed interest accruals for the year on long term debt at the annual rate of 10 1/2% based on the deemed balance of long term debt outstanding during the year which is the sum of:

1. 75% of the mean average from the opening accounts for the year and from the closing accounts for the year, of the total investment which is the sum of:
 - (i) the original cost of the plant, facilities and deferred charges, plus
 - (ii) deemed cash working capital of 12 1/2% of the operating expenses for the 12 months of the year, plus
 - (iii) the cost of reasonable inventory of materials, equipment, parts and supplies required for the operation, maintenance and administration,
less
2. the mean average, as at the opening of accounts for the year and at the closing of accounts for the year, of the cumulative total deemed repayments of the principal of long term debt made in equal annual amounts of 1/20th of 75% of each addition to total investment, as defined in 1. above, on July 1st of each year beginning in the year immediately following the year such addition was made.

plus

(e) Provision for current federal, provincial and other government income taxes for the year on the basis that:

1. the operation of the Canadian System is the only business of a company, and
2. the deductions permitted under the applicable tax legislation and regulations will be taken commencing with the first date cost of service payments accrue and will be used so as to minimize the amounts of income taxes payable, and
3. the interest expense is as determined in (d).

II. U.S. SYSTEM

The annual cost of service revenues required for the U.S. System shall comprise the sum of:

(a) Actual operating expenses for the year, including operations, maintenance and general expenses (but excluding depreciation and amortization charges, and federal, state and other government income taxes), plus

- (b) Depreciation and amortization charges for the year, commencing with the fourth full calendar year of operation, on tangible and intangible property, and deferred charges using annual straight line rates as filed with and approved by the Interstate Commerce Commission of the United States, plus
- (c) Return on rate base for the year at an annual rate (expressed as a percentage of the rate base) which is:

$$\frac{19 + V}{12}$$

where "V" is the number of thousands of barrels per day on an average over the year of all liquid hydrocarbons which in total are tendered to the System in that year or were obliged to be tendered to the System or be subject in any event to payment of the Cost of Service with respect thereto under the various Shipping Agreements; provided that "V" shall not be less than 50 or greater than 80

and where the rate base for the year is the sum of:

- 1. (i) the latest final valuation of property owned and used for common carrier purposes, under orders of the Interstate Commerce Commission, determined in accordance with the methods used by the Interstate Commerce Commission in determining valuation,
plus
- (ii) additions to, less deductions from the value of common carrier property, after the date of such latest final valuation under such orders in 1. (i), computed as of the close of the immediately preceding calendar year, in accordance with the methods used by the Interstate Commerce Commission in bringing valuations down to date,

and

- 2. for any valuation sections for which the Interstate Commerce Commission has not ordered the final valuation of property owned and used for common carrier purposes, and until such time as the Interstate Commerce Commission makes such orders, then for such valuation sections, the sum of:
- (i) the valuation based on the records and accounts kept in accordance with the accounting methods set forth in the Uniform System of Accounts for Pipeline Companies prescribed by the Interstate Commerce Commission, plus

(ii) the value of additions and improvements in property after the date of the determination in 2. (i), less deductions for depreciation and retirements of property, computed as of the close of the immediately preceding calendar year, in accordance with the Uniform System of Accounts for Pipeline Companies prescribed by the Interstate Commerce Commission,

plus

(d) Deemed interest expense for the year on long term debt at the annual rate of 10 1/2%, based on the deemed balance of long term debt outstanding during the year which is the sum of:

1. 75% of the mean average from the opening accounts for the year and from the closing accounts for the year, of the total investment which is the sum of:

- (i) the original cost of tangible and intangible property, and deferred charges, plus
- (ii) deemed cash working capital of 12 1/2% of the operating expenses for 12 months of the year, plus,
- (iii) the cost of reasonable inventory of materials, equipment, parts and supplies required for the operation, maintenance and administration,

less,

2. the mean average as at the opening of accounts for the year and at the closing of accounts for the year, of the cumulative total deemed repayments of the principal of long term debt made in equal annual amounts of 1/20th of 75% of each addition to total investment, as defined in 1. above, on July 1st of each year beginning in the year immediately following the year such addition was made.

plus

(e) Provision for current federal, state and other government income taxes for the year on the basis that:

- 1. the operation of the U.S. System is the only business of a company, and
- 2. the deductions permitted under the applicable tax legislation and regulations are used so as to minimize the amounts of income taxes, and
- 3. the interest expense is as determined in (d).

AMENDMENT AGREEMENT

THIS AGREEMENT made this day of July, A.D. 1976

BETWEEN:

COCHIN PIPE LINES LTD., a body corporate with head office at the City of Calgary, in the Province of Alberta (hereinafter called "Cochin") and DOME PIPELINE CORPORATION, a body corporate incorporated under the laws of the State of Delaware, U.S.A., (hereinafter called "Dome Pipeline") (both of which parties are hereinafter collectively called "Operator")

OF THE FIRST PART,

- and -

DOME PETROLEUM LIMITED, a body corporate with head office at the said City of Calgary, (hereinafter called "the Shipper")

OF THE SECOND PART.

WITNESSETH that the parties agree that the agreement between the parties dated 12th day of May, A.D. 1976 entitled Ethane Shipping Agreement" be and it is hereby amended in the following manner:-

1. In the fourth recital on Page 2 delete the words "subject to the conditions precedent to the effectiveness of this agreement having been fulfilled" so that the said recital shall read:

AND WHEREAS Operator and the Shipper have agreed that Operator will transport for the Shipper and the Shipper will tender to

the said pipeline system for transportation, certain volumes of Ethylene as hereinafter provided;

2. In paragraph 1.11 delete the words "subject to the condition precedent therein" so that the said paragraph shall read

1.11 "Dow Ethylene Shipping Agreement" means that certain agreement made as of even date herewith between Operator and Dow pursuant to which Dow undertakes to ship ethylene through the System for a minimum term commencing approximately December 31st, 1979 and continuing for a period ending no sooner than the Earliest Termination Date as same is defined in said Agreement;

3. Delete Article II in its entirety and substitute therefor the following:-

ARTICLE II - ENTIRE AGREEMENT

2.1 This agreement constitutes the entire agreement between the parties and there are no conditions, understandings, representations or warranties affecting the obligations of the parties hereunder except as expressed herein.

4. In paragraph 3.1 delete the words "upon the condition precedent in Article II having been met" so that the said article shall read as follows:-

3.1 The Operator agrees that it shall proceed to construct the System; etc.

5. At the end of paragraph 4.2(a) delete the punctuation period and add the words

"and the said tariffs may include recovery by the Shipper within a reasonable period of time of extraordinary product losses incurred in the prior period."

6. Add a new paragraph to Article IV as follows:

4.7 Tariffs for shipments through the U.S. System and the Canadian System shall be calculated, billed and paid in U.S. dollars and Canadian dollars respectively.
7. In paragraph 1(b) of Part I of Schedule A replace the word "fourth" in the second line thereof with the word "third", and in the fourth line thereof after the word "rates" add the words "of not less than 3.57 percent" so that the said paragraph will read as follows:-

(b) Depreciation and amortization charges for the year, commencing with the third full calender year of operation, on plant facilities and deferred charges using annual straight line rates of not less than 3.57 percent as filed with and approved by the National Energy Board of Canada, plus
8. In the second line of paragraph 1(d) of Part I of Schedule A replace the expression "10 1/2%" with the expression "11%".
9. Amend Part II of Schedule A so that those provisions of Part II which correspond to the provisions of Part I are amended in the same manner as is Part I under 7 and 8 above.

10. Delete Schedule B in its entirety.

IN WITNESS WHEREOF the parties hereto have executed this Agreement under their respective corporate seals properly attested as of the day and year first above written.

COCHIN PIPELINES LTD.

DOME PIPELINE CORPORATION

[Signature] *J. T. Walker*

DOME PETROLEUM LIMITED

[Signature] *J. T. Walker*

